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# Washington Highlights

Business at hand and the apparent chief concern of the National Petroleum Council is a number of various problems relating to oil now pending before the Oil and Gas Division of the Department of the Interior

Ralph K. Davies, acting director of the division, submitted these problems to the council for its advice and recommendations in a letter recently forwarded to Walter S. Hallanan, temporary chairman of the council.

The proposals made by Mr. Davies pointed out the great need for the assembly, compilation and analysis of petroleum statistics on a world-wide basis in a manner comparable to the information assembled by the Petroleum Administration for War.

Another problem, currently a plague to the petroleum industry, is a shortage of pressure tank cars for the transportation of liquefied petroleum gases. The oil executive said that this shortage threatens seriously to interfere with the meeting of essential industrial and civilian requirements.

The council was requested to establish a committee for the study of the acute and growing shortage of materials of various types needed by the oil and gas industry, particularly materials containing steel, lead and other metals, vital to various activities effecting the national welfare.

The council also was asked to set up committee to consider the regulations proposed by the Department of the interior revising rules implementing the Federal Mineral Leasing Act, as recently amended.

To acquire an authoritative technichal valuation of refinery capacity relating to future availability of fuels for military aircraft, Mr. Davies stated that the Bureau of Mines has requested the Oil and Gas Division to encourage the forming by the National Petroleum Council of a committee to compile the necessary information.

Questions relating to the adequacy of domestic reserves, and the importation of crude oil and its products, of access to foreign reserves, and of actions by the Government thereto which should be taken to insure sufficient supplies for the U. S. are constantly arising, Mr. Davies explained. Due to their great national importance, he added, it seems clearly advisable that there be a committee of the council to study such problems in the manner that the National Oil Policy Committee did during the existence of the PAW.

He asserted that it is the view of the Interior Secretary and himself that these are matters on which the counsel and advice of the oil industry are of prime moment if governmental action is to be intelligent and effective and based on full knowledge and understanding of all the facts.

The National Petroleum Council held its second meeting September 26.

Taking a snip out of Washington red tape, President Truman has signed an amendment to regulations of the Connally "Hot Oil" Act, which will decrease by approximately 60 per cent the number of reports required on oil shipments by tanker, barge or other vessels.

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Edwin W. Pauley, special reparations envoy, has prepared a report for the White House infering that Russia has decided to remain in North Korea, permanently or until it can set up a communized puppet authority entirely subservient to the Soviet. It will be submitted to the President shortly and incorporate a number of recommendations in adjustment of reparations claims and other political aspects bearing on the situation.

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According to reports filed with Congress, the Democratic National Committee spent about $200,000 more in the first eight months of 1946 than the Republican National Committee. Total expenditures of the Democratics up to August 31 was $692,000, and of the Republicans $476,000. Contributions during the same period were $622,559 to the Democratic party and to the Republican organization, $331,894. The Republican group received $290,775 less than the other major party.

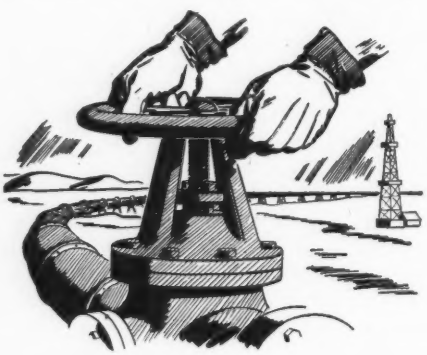
# Looking Around

By THE OBSERVER

## NO GOLDEN SPIKE, BUT A MIGHTY BIG BLACK SPLASH

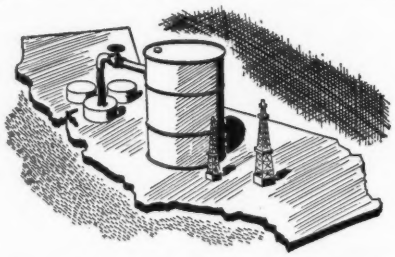
The ceremony of opening a new crude oil pipe line for business isn't spectacular. No floral horseshoes. No golden spike. Somebody hollers, "Let 'er go!" and a man in overalls twists a gate valve. And there, with a boost from some husky pumps, goes the black, writhing oil on its way.

That's what happened recently at Kettleman City and Coalinga. Two and a half days later, the first of the oil arrived at Los Medanos on Suisun Bay, 176 miles away.



What's important, if not spectacular, is that from now on the light crudes of southern San Joaquin, Kettleman and Coalinga will flow to the refineries in a stream that can't be interrupted by tanker shortages or storms at sea. The important pipe line from Bakersfield and Kettleman over the Coast Range to Estero Bay will still handle heavy crudes—some 75,000 barrels a day. And the new line will handle 110,000 barrels a day.

We built an 8-inch pipe line, Bakersfield to Richmond, early in the century and used



it from 1904 to 1934. With the discovery of the Kettleman field we built the pipe line, a 10-incher, that crosses the Coast Range to Estero. Sea warfare and the tanker shortage in 1942 caused the oil companies to make combined use of an existing natural gas pipe line, leasing and converting it for oil.

We decided, come peace, to build this new 18-inch line of our own. We were at it from January to July. It's a $4,000,000 project, now completed, and we're proud of it. It's the biggest oil line we've built to date on the Pacific Coast. It will help us to serve the West better than ever.

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**STANDARD OF CALIFORNIA**

# Social-Economic Values Arising From Widespread, Abundant Availability of Petroleum Products

By John D. Gill
Economist and Director
The Atlantic Refining Company

**Opening Remarks of Panel Discussion
National Petroleum Association,
Sept. 19, 1946**

It is refreshing to turn from a consideration of the allegations that in thirty odd counts we are represensible of questionable business practices to an examination of the social and economic benefits which our efforts have conferred upon the people. By sponsoring this panel discussion the National Petroleum Association has rendered a signal service to the industry and the people.

Really questionable or downright illegal conduct should have resulted in material financial advantage to the offenders. Profits are criteria. Indeed, during recent years one agency of the government has judged the propriety of the industry's prices by the industry's profits. Perhaps similar reasoning should be applied to the nature, intent and effect of conduct. As a matter of fact the industry's profits, expressed as a rate of return on investment, have lagged behind the profits of many other industries. But this is not the time or place to discuss the complaints or to deny alleged culpability. Happily, for the moment, we are not concerned with any one's views of our business morality, but rather with our achievements.

It is my pleasant duty to outline in the broadest terms our contribution to the country's social and economic welfare. Thereafter I shall call upon the gentlemen of this panel, each an expert in his chosen line, to elaborate upon the good we do.

I shall not take much time to prove that the distribution of petroleum within the United States has been widespread and that petroleum products have been made abundantly available. Petroleum's chief derivative is obtainable in virtually every one of the 17,000 incorporated places in the United States and in many thousand unincorporated places besides. Gasoline is available at approximately 400,000 outlets, or at nearly ten times as many places as there are postoffices. According to the last Census of Business there were more gasoline service stations than any other kind of retail store, excepting only grocery stores. Even in remote counties of our most sparsely settled states, where the population averages less than one person per square mile, there is one filling station for about each 200 persons, or one for every 35 or 40 automobiles—an intense coverage by some standards, but a reasonable coverage when judged by mileage and need.

Abundant availability is a comparative term. Few persons have all material desires satisfied. In the United States petroleum products have been so cheap and so widely distributed that nearly everyone has had opportunity to obtain greater intrinsic values from them than from any non-food merchandise. During the last prewar year our per capita consumption was more than twice that of the next ranking country, Canada; four times as much as that of the people of the United Kingdom; seven times as much as France; over eight times as much as Russia, forty times as much as Brazil and six hundred times as much as China.

The relatively large consumption of petroleum products by the people of the United States has had profound effects upon their social and economic welfare. Before the advent of petroleum the economic growth of our country was slow indeed. For example, in the decade of the 1850's the annual increase in the real per capita income was only about one quarter of one per cent. Even during the next forty years, or from the beginning of the petroleum industry to the beginning of the present century, the real per capita income moved generally slowly upward, in approximate parallelism with the slowly growing usage of petroleum as shown by the graphs of Chart I. Had the per capita national real income continued to rise only at the 1890-1900 rate, by the year before Pearl Harbor it would have been only $543 in terms of 1935-39 dollars. However, as shown by the chart, the national income actually rose much more rapidly, to $692. The difference between these figures, extended to the entire population, is equivalent to approximately 20 billion dollars. The beginning of the more rapid rise in the national income is about coincident with the beginnning of the rapid rise in consumption of petroleum. It might be said that the extensive use of petroleum ushered in a new era for the American economy.

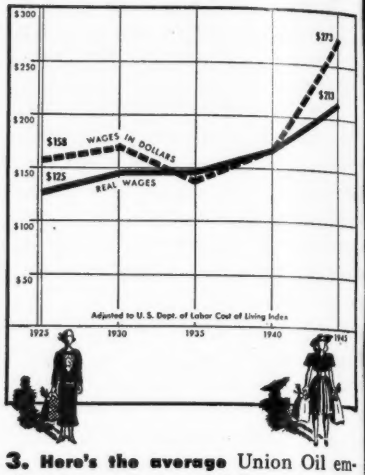
With the aid of Chart I I have shown how rapidly the use of petroleum grew after the decade of the nineties, and how usage was accompanied by accelerative growth in national income. I have shown also haw much more extensively petroleum has been consumed within the United States than in other countries. These facts are meaningful of themselves, but they become more significant when examined in the light of a comparison of subsequent changes in the per capita national income of the people of the United States with those of other countries. For example in the decade of the nineties it is doubtful if the per capita income of the United States was as large as that of the leading industrial European country. But after three decades of accelerative growth, under the stimulus of increasing consumption of petroleum, the per capita income of the people of the United States measurably outdistanced that of Great Britain and indeed that of every other European country. By 1928 the per capita income of the people of the United States was perhaps as much as 40 per cent above that of Great Britain and double that of France and Germany.

# There's only one way to raise wages

**1. Each year** a business produces so much income. Part of that income goes for rent, raw materials and other expenses. What's left is divided between the employees and the owners–as wages and profits. Many people think wages can be raised by giving employees a bigger *share* of the income that's left. But in 9 cases out of 10 this can't be done.

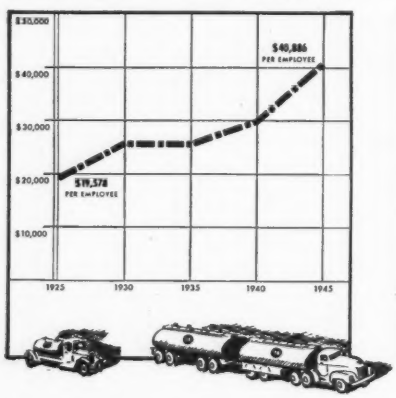
**2. In most U. S. businesses** the employees are *already* getting a lion's share of the income. Last year, for example, Union Oil employees got 77% of all income the company produced over expenses. (The stockholders got 12% in dividends and 11% was plowed back into the business.) Nevertheless, employees' wages since 1925 have almost *doubled*.

AVERAGE MONTHLY WAGE PER UNION OIL EMPLOYEE



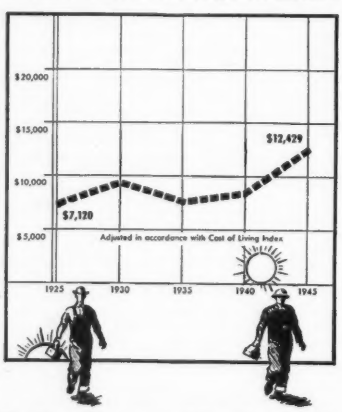

**3. Here's the average** Union Oil employee's wage in actual dollars per month (dotted line above). Of course $1 today won't buy what it bought–say–in 1935. So we've also converted those dollars into "Real" Wages (solid line). This shows what the U. S. Dept. of Labor Cost of Living Index found the pay check would actually *buy* each year in food, clothing, etc.

DOLLARS INVESTED IN "TOOLS" PER UNION OIL EMPLOYEE

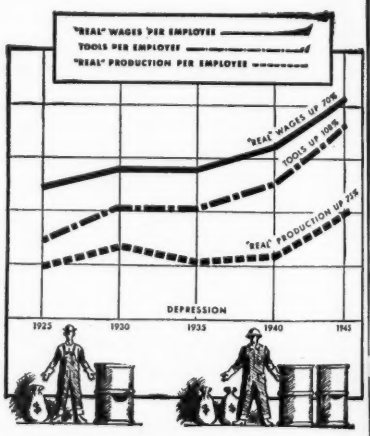



**4. Now, if there are** only so many "pieces in a pie," how were wages increased that much? Mostly by producing "bigger pies." In 1925 each Union Oil employee had an average of $19,578 worth of "tools"–oil wells, refineries, trucks, etc.–to work with. By 1945 the owners had provided him with $40,886 worth–*twice* as much.

ANNUAL PRODUCTION PER UNION OIL EMPLOYEE




**5. "Tools" are one thing** that enable people to *multiply the labor of their hands*. Today, Union Oil people work about 35% fewer hours than in 1925. They have better vacation, hospital and pension plans. But because they have more "tools" with which to work, they can *produce* more. And because they can produce more, per employee, they are able to *earn* more.




**6. The three charts together** show graphically that the only real way to *raise wages* is to *raise production*. But one word of warning: Until recently, stockholders have always had the *incentive* to provide *more* and *more* "tools". Today, much of that *incentive* has been whittled away. Unless it is restored, we're not going to have the progress in the future that we've had in the past.

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**OF CALIFORNIA**

*This series, sponsored by the people of Union Oil Company, is dedicated to a discussion of how and why American business functions. We hope you'll feel free to send in any suggestions or criticisms you have to offer. Write: The President, Union Oil Company, Union Oil Bldg., Los Angeles 14, Calif.*

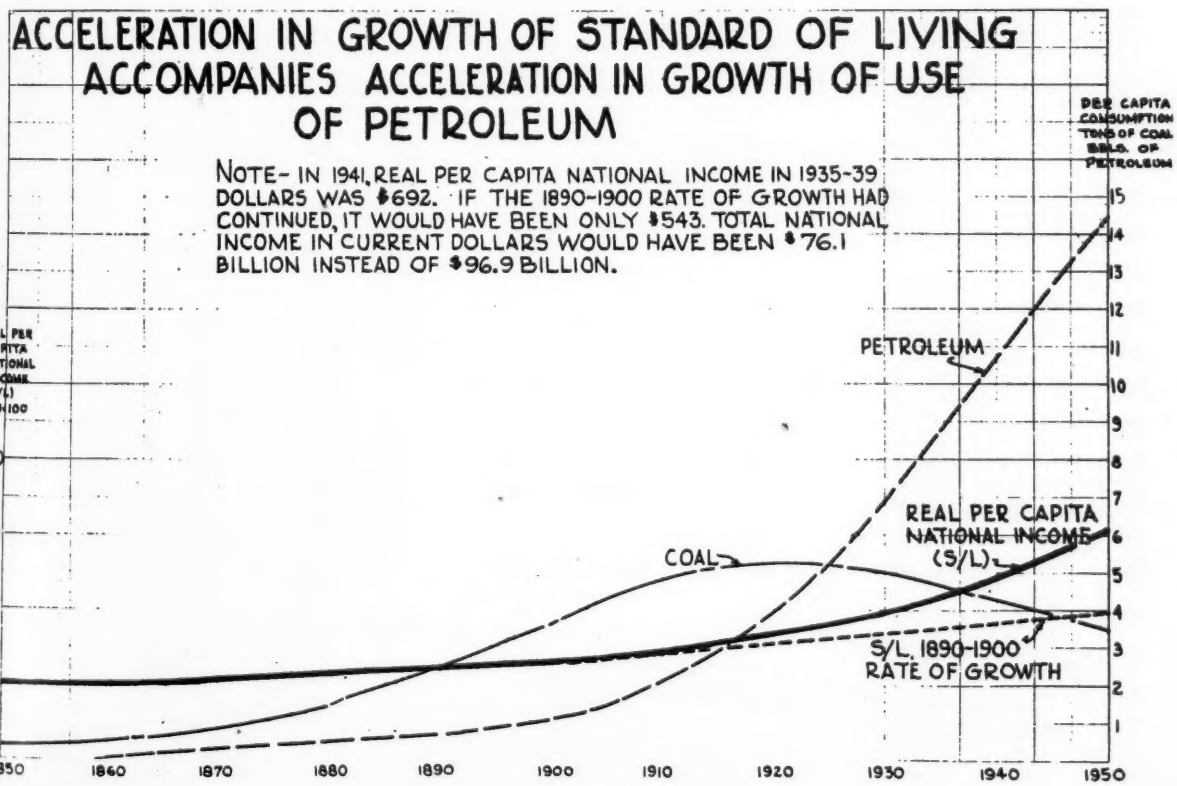
**AMERICA'S FIFTH FREEDOM IS FREE ENTERPRISE**

An understanding of the way in which petroleum helped to accelerate the growth of the American economy is not merely intellectually satisfying; it is also a matter of considerable practical importance because it is a necessary prerequisite to further growth from the same cause.

During the decade of the nineties, and, of course, for ages before, an immense amount of manual labor had to be expended to achieve relatively small results. This was so on the farm, in the forest, at the quarry, and mine, in highway and general construction, and in many other outdoor economic activities. Axiomatically, man advances economically by multiplying his own energies through the use of animal and mechanical power. He has multiplied his power many times with the aid of petroleum. For example, in the field of local transportation he has been able to move goods to an extent which would have been impossible with manpower and virtually impossible even with animals. An estimation of the number of horses, the amount of feed required to maintain them, the number of acres and man-hours required to raise the feed, to perform the work of motor trucks leads to fantastic figures.

Many jobs have been created by the production, transportation, manufacture and utilization of petroleum. However, the argument is not offered here that petroleum's primary function was the making of jobs, but, rather, emphatically, that it has served effectively by reducing the human labor otherwise necessary to provide the essentials of good living and national security. Labor saved on established tasks is labor available for use in other directions. This has been the genius of the American economy in the petroleum era.

Now I am not no naive as to suggest that the rapid rise of economic welfare is attributable solely to the efforts of the personnel in the petroleum industry. No doubt, by and large, the industry's personnel is no smarter than that of other industries, though it may be true that the opportunities offered by the industry attracted to it capable men whose acts, judged by the standards of the times, stamped them as faithful trustees of an important natural resource—men who were actuated by an enlightened self-interest. They exercised intelligence, sound judgments and a know-how acquired through much industry. This combination of qualities is indicated in several ways—perhaps most briefly, convincingly by the fact that the industry has engaged more extensively in research for the development of new products, better products and cheaper products than any other large natural resource industry. This aspect of the subject is too large to detail here, but it may be noted in passing that the industry's scientific and technical developments during the two decades before the second world war enabled it to provide twice as many barrels of products in 1940 as it did in 1924, at only one-fourth greater wholesale market value. Moreover, the 1940 barrel of products contained 43 per cent of a high quality gasoline, while the 1924 barrel contained only 31 per cent of lower quality.



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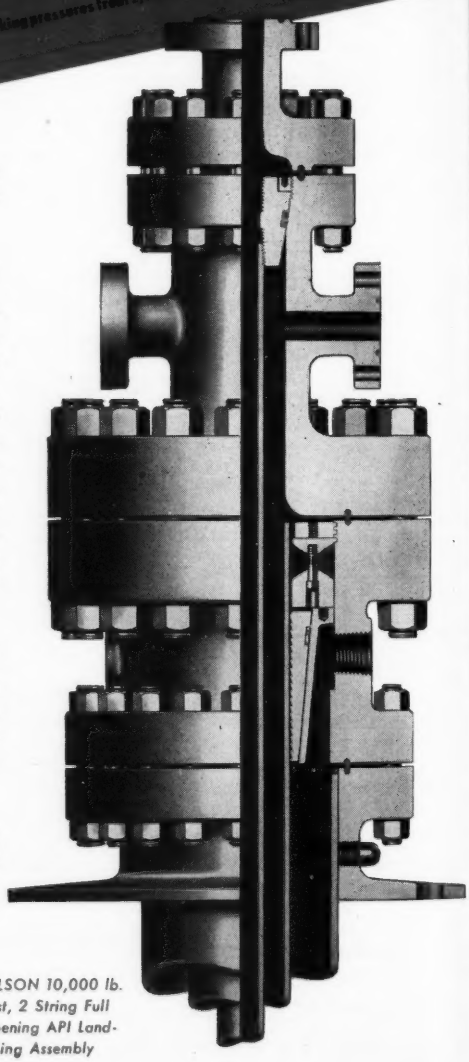

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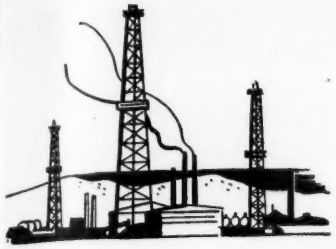


The achievement just mentioned may have been realized as much because of the employment of generally sound economic measures as by the employment of scientific principles. The latter are well-known and universally approved. The former entailed the development of the integrated form of unit organization. In the petroleum industry integration was a "natural", which, because of the intensity of the competition it promoted, has undoubtedly been one of the prime forces making for rapid economic progress of which we speak. In the years to come it may be acknowledged that the very type of organization which has laid the industry open so frequently to criticism may prove to be largely creditable for the acceleration in growth of the entire economy.

Of course, the highly beneficial utilization of petroleum products has required the inventions of men in other lines of business. No doubt they were stimulated to inventiveness by the growing availability of liquid fuels. No doubt also the current availability of petroleum as a chemical raw material inspires chemists to immense activity and achievement. The opinion is offered that the joint action of the men of the petroleum industry and those of the mechanical and chemical industries has made possible growth in real per capita income at the rate of 2.5 per cent per annum. This rate of growth, established during the several years before Pearl Harbor, is ten times the estimated rate of growth in the 1850 decade.

I digress to call your attention to the probability that even if the supply of petroleum were now depleted as a result of its rapid production and use, we would nevertheless be economically better off than if production had been at a substantially slower rate. What we have done economicallly in the past has made it possible to do more in the present. The use of petroleum has helped us to find other energy resources, including nuclear energy.

However, there is no imminence of depletion of our petroleum resource. The personnel which assisted in bringing the benefits of petroleum to the people have studied the principles of conservation and have put them into practice. They have applied the best knowledge of the times, the latest techniques, to the cause of service to the present generation without incurring avoidable waste which might handicap future generations.

There are in the United States, according to expert geological opinion, about 950 million acres of lands geologically favorable to the existence of oil. Less than 200 million of these acres are currently under lease for the purposes of prospecting, and the entire (nearly 5 million barrels per day) current production of crude oil, rises from reserves covered by only a little more than 5 million surface acres. Even obvious physical wastage of natural gas in the early years of the industry's operations was as necessary to the rapid growth of social and economic values as were the apparent wastages in other natural resource industries, which already have been justified by the trend of events, as, for example, by the lessened need for anthracite coal. The cheapest way to do a thing is the economic way. Petroleum, which has endowed the public with great benefits, might not have been available had its production waited until the gas which accompanied it could find useful employment. The energy resources of the world indicate no probable loss to future generations. The present controversy over world oil resources probably reflects **less** a fear of lack of resources for the future and rather **more** the belief that "A bird in the hand is worth two in the bush."

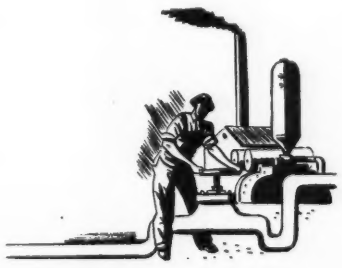
One of the very important ways in which petroleum has functioned in the United States has been in the field of personal transportation. The widespread abundant availability of motor fuel and related products has provided our people with a mobility which has greatly enriched life. Aside from all other considerations this fact alone has made a profound difference between the way the people of our country are knit together and the comparatively well defined segregations of the past. By inter-mingling, with the aid of petroleum-powered transportation, the peoples of one area have come to an understanding and appreciation of peoples of other areas, and have exchanged economic and social ideas. Undoubtedly we suffer from the existence of blocs, and we may continue to have blocs for an indefinite time, but how many more isolated groups would we have with no wholesome feeling for other groups, except for the mobility which the petroleum-fueled automobile has made possible.

The importance of personal transportation in the estimation of the American people is indicated by the compilations of the National Industrial Conference Board, which show that in 1909 the average per capita expenditure for transportation was $12, or 4.1 per cent of the total individual budget, whereas in 1941, the average was $63, five times that of the earlier year, representing 10.5 per cent of the individual's budget.

The 1941 expenditure for personal transportation was greater than that for any other type of personal expenditure, excepting food, clothing and home maintenance. But the cost of the petroleum involved was not much over 3 per cent of the total expenditures.

Through the kerosene lamp, petroleum enabled man to extend useful and pleasurable activities into the night. Through the combustion engine, it has enabled him to

*(Continued on Page 32)*



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# Practical Considerations in Evaluating Pressure Maintenance

**Lloyd L. Gray**
**Gulf Oil Corporation**

Despite the many years pressure maintenance and unitization have been under consideration, there are still very few active projects. "Rugged individualism" alone does not adequately explain the dearth of projects for there are a large number of community projects and partnerships where one or more parties lose some of their freedom of action. Although engineers and scientists have made great strides in improving techniques of evaluating pressure maintenance, the engineers have done many things which tend to destroy confidence in their findings. If the situation is to be improved, the engineers must take steps to inspire confidence.

Conclusions drawn from discussions with various individuals favoring and opposing pressure maintenance are as follows: :

1. Avoid so far as possible the cooperative project as distinguished from the unitized project.
2. Require that all facilities, gas and gasoline plants be owned by the Unit.
3. Do not force a questionable project through.
4. The unitization contract terms on voting and organization should be particularly generous to the minority operators.
5. The Unit operator should have an adequate staff with the proper attitude to carry out the rather delicate control essential to attain maximum benefit.
6. Lease stipulations should include a royalty pooling clause.

### Expansion of Pressure Maintenance Lagging

Active engineering consideration has been given to pressure maintenance and unitization for at least 15 or 20 years. During that period literally thousands of pools have been discovered and in fact hundreds are discovered each year yet the total active pressure mantenance projects in this whole country can be numbered in the tens. Is that a good record of achievement? Is it one of which the engineer can be justly proud? The record certainly is not commendable and the profession cannot justly hide behind the statement "The present situation is due to forces beyond our control."

It is recognized that there are many adverse forces not under direct control of the engineer; such as "rugged individualism," legal matters, "nuisance value" and difficult royalty interests. Although such matters are not under direct engineering control, most of them are susceptible to an engineer's influence provided there is confidence in the engineering analysis of the problem.

There can be little doubt that the engineering profession believes in benefits to be derived from pressure maintenance and unitization projects. This is evidenced by the large amount of effort being put forth by engineers independent of company affiliations. On the other hand, such efforts have but little practical value unless more projects are put into operation. It is believed that the most practical suggestion that can be made is that the engineers conduct themselves and present their reports in a manner to inspire confidence.

Presented before A.P.I. Div. of Production, Mid-Continent District, Oklahoma City, Okla.

### Pressure Maintenance Sold by Facts

Confidence cannot be expected if the supporting evidence is misrepresented to acquire a desired end. Pressure maintenance should be accredited its estimated fair share of the returns but to purposedly allocate pressure maintenance with undue increased recovery to "get the operators to come into the project" is both dangerous and unfair and does not breed confidence.

How often have you read a glowing, optimistic and enthusiastic report of the increased profit to be gained from pressure maintenace with the last sentence stating, "This is a conservative estimate"? No substantiating evidence; just the unsupported statement. Does that promote confidence?

Have you not read reports where the geology of the reservoir was hardly mentioned? Where even a layman could rightly criticize that the report was founded on an unsubstantiated assumption. These are merely a few of the many things the engineers—individually and collectively—have done to destroy confidence.

Despite the many things which may have retarded the application of pressure maintenance, the method has such inherent merit, and engineers and scientists have made such great strides in developing methods of analyses and predicting future performance, that it is being given more consideration today than ever before. It behooves the profession as a whole to take advantage of this situation and demand that reports on pressure maintenance be thorough, complete and unprejudiced, together with full listing of essential assumption and, where necessary, the reasons for their selection. Such reports should also include a frank discussion of indeterminate or transient factors and their probably effect upon the estimated future performance as well as a discussion of safety factors used and their adequacy to insure at least the performance predicted.

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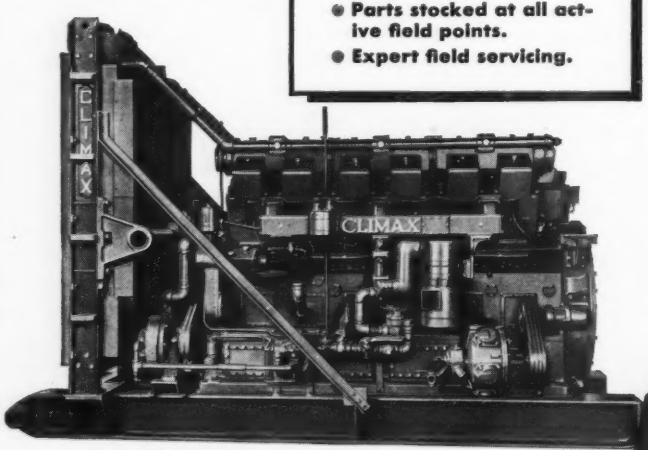


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### Engineering Evaluation Must Be Sound

In the matter of confidence there is a definite need of the engineer having confidence in his own work. Not so much that he is not satisfied that the results are reasonable, but confidence that he can justify all the necessary assumptions and indeterminate factors. A few examples of his vulnerability are as follows:

1. Relative permeability is a critical factor in performance calculations. Yet the authorities are not entirely satisfid with the values now published. This is probably a minor matter, however, for the values used are probably more nearly accurate than, for example, the cumulative gas production.

2. The amount of oil that will be obtained by gravity drainage is seldom included in comparison of normal primary with pressure maintenance recoveries. Present experience does not permit accurate determination of gravity drainage, although it must occur in all producing reservoirs, particularly those having high permeability and substantial structural relief. Nonetheless it might be embarrasing to an engineer if a pressure maintenance project actually recoverd its total estimated normal primary oil recovery within a period of four or five years, due to insufficient consideration being given to gravity drainage.

3. It is difficult to evaluate the effect of by-passing. However, this may mean the difference between success and failure of a pressure maintenance project. The recent paper by Hurst and Van Everdingen show some of the haards which may be involved in recycling operations when there is a wide range in formation permeability.

### Joint Confidence Essential

These may appear to be technical problems and not practical considerations. On the other hand, failure of a worthwhile proposal to materialize into an active project is a practical consideration. If this is due to lack of confidence, let's take steps to correct the situation.

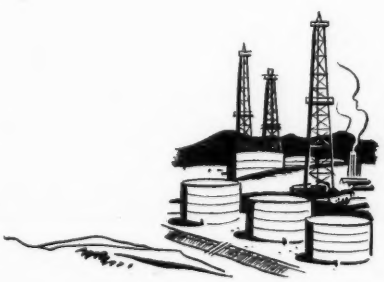
It is felt that companies and individuals generally do not refuse to join pressure maintenance projects because of rugged individualism. There are literally hundreds of community projects and thousands of partnerships. In each of these one or more parties had to give up some of his freedom of action. They apparently were confident the advantage outweighed the disadvantages and that they all had a relatively even break. With confidence in the engineers' evaluations could we not obtain approval of more pressure maintenance projects?

The inclusion of a royalty pooling clause in the original lease stipulations should be of definite benefit in consummating pressure maintenance and unitization negotiations. All too often the initiation of worthwhile projects is long deferred or the project actually has to be abandoned because of difficulties encountered in obtaining royalty owners' approval.

### Conclusions

A digest of statements from people in favor of pressure maintenance, and those opposing it, brings out the following conclusions:

1. Avoid, if at all possible, the cooperative project as distinguished from the unitized project. Such projects usually retain most of the undesirable features of individual operation, are conducive to wide differences of opinion and frequently result in alienating a number of companies and individuals who were originally favorable to pressure maintenance.
2. Require that all facilities, gas lift, booster and gasoline plants be owned by the unit. This will forestall the all-too-frequently-stated criticism (usually unsubstantiated, that the project was promoted by and for the benefit of those owning plants or other facilities. It should also result in better coordination of producing schedules and plant load factors.
3. Do not force a questionable project through. There are too many good prospects to waste time on ones of questionable value at this stage. One failure or one with disappointing results will do more damage to the confidence of many individuals than a number of outstanding successes can reestablish.
4. The unitization or contract term on voting and organization should be particularly generous to the minority operators. A charge that minority interests have been persistently or maliciously outvoted can be very damaging to negotiations for future projects.
5. The unit operator should have an adequate production and technical staff, with the proper attitude to carry out the rather delicate control essential in order to attain maximum benefit. The benefits shown in the engineering report were premised on efficient reservoir control. An indifferent unit operator could conceivably cause a good prospect to fail.
6. Above all, don't draw conclusions until the facts have been gathered and analyzed. This is not an infrequent criticism and reports submitted too often reflect the possibility.



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Presented before A.P.I. Div. of Production, Mid-Continent District, Oklahoma City, Okla.

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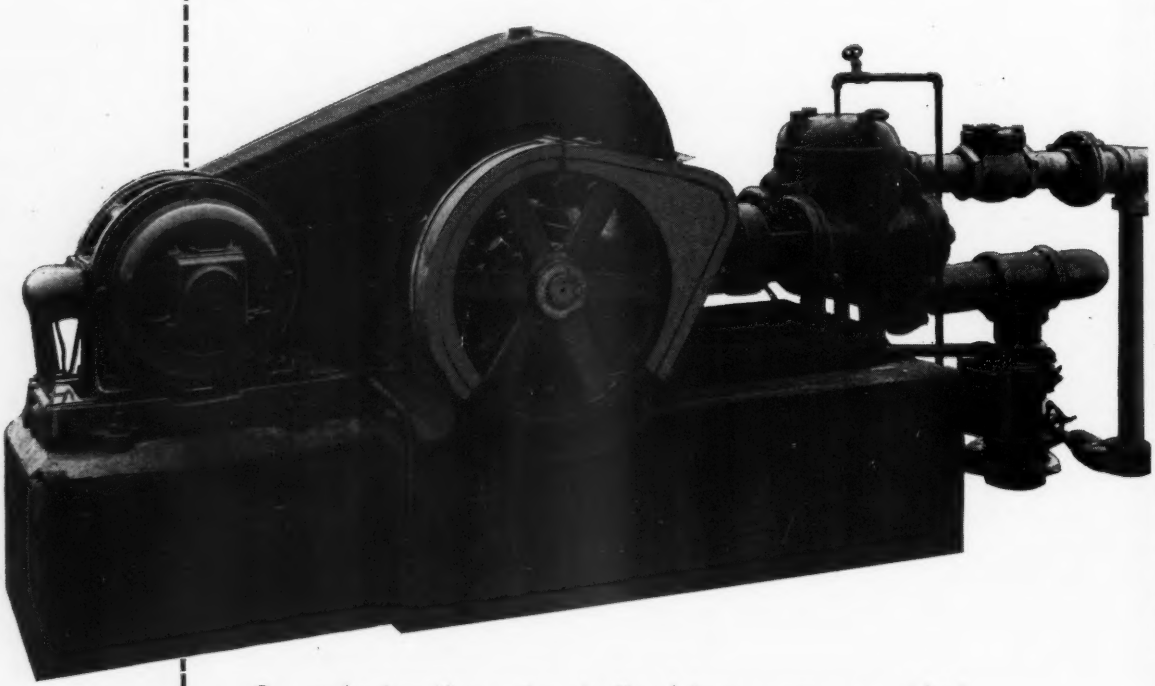
## Surf Wildcat Drills Ahead

L. & W. Oil Co., Ltd. Surf No. 1 in Sec. 13-6s-11w in the vicinity of the Huntington Beach field is drilling in sand and shale below 4650 ft. A. W. Lyddon, Operator, Lamb Comm. No. 2 in Sec. 6-6s-10w is drilling at 5560 ft. Crew Comm. No. 1 in Sec. 32-5s-10w has been plugged back from 9752 to 8700 ft. and casing run for a test of showings. Holtz No. 7-1 in Sec. 7-6s-10w is rigging up.

# Electric Power

## EXCELS FOR EVERY TYPE OF PIPELINE PUMPING



On gathering lines, electrically driven pumps are ideal because the initial investment is small, maintenance costs are low, and their "push button control" is so simple. For trunk line operation, the simplicity and dependability of the electric motor are no less important. Unattended, automatic or pressure-controlled stations employ electric motors.

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# Richfield's Boyle Heights Test in Los Angeles Urban Area

In the last two years several drilling projects have been undertaken in and around the City of Los Angeles with the hope of discovering a new oil field or of establishing deeper production in old fields. Many restrictions have been placed on these projects by various governmental bodies. In each instance the operators have gone far beyond the specific requirements imposed and have made every effort to conduct their operations in a manner best calculated to protect the interests of the adjacent property owners.

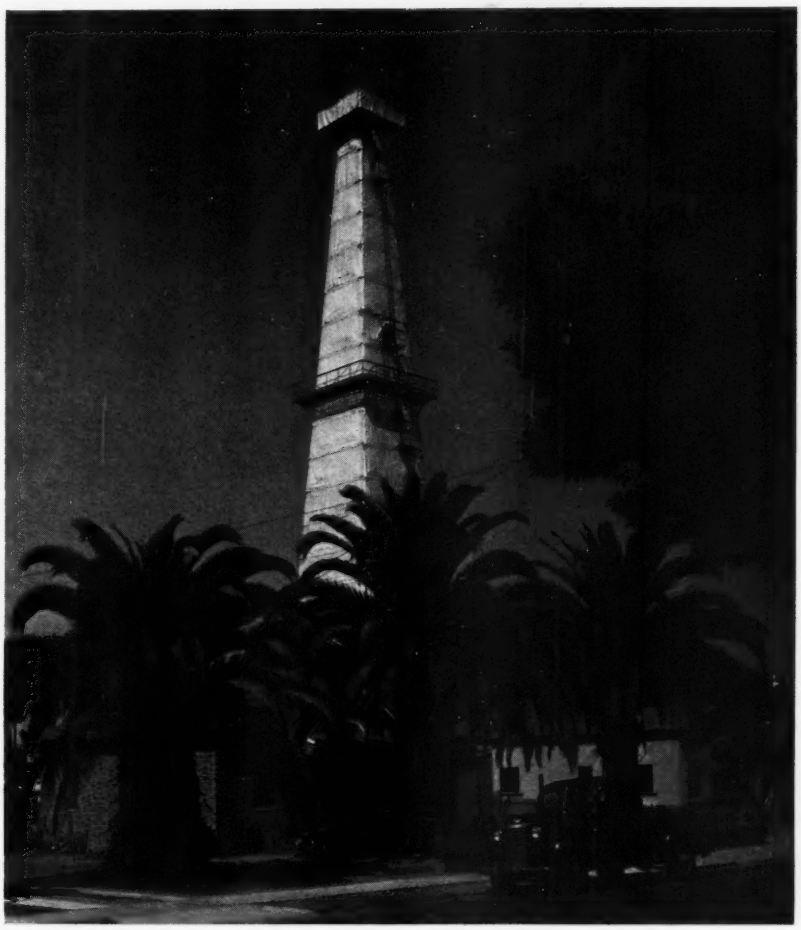
The latest project of this town lot type of drilling is Richfield Oil Corporation's Boyle Community No. 33-1 in the Boyle Heights District of East Los Angeles. The drill site selected is a 60-foot by 150-foot portion of a lumber yard in this congested urban area near the corner of Brooklyn and Rowan Avenues. Several hundred acres of town lots, over three thousand separate parcels of land in all, comprise the lease block. This phenomenally difficult leasing campaign was conducted by the Boyle Royalties Company and has been in progress for several years. In July, 1946, Richfield Oil Corporation entered into an agreement with Boyle Royalties Company to drill one or more test wells by drilling diverted holes from the lumber yard location. If a discovery is made it is possible that as many as 40 diverted holes will be drilled for the development of 300 or 400 acres, all from a surface area of approximately two acres.

The Los Angeles County Planning Commission granted a variance from its zoning restrictions to permit the drilling operations, provided they be conducted in a manner to prevent dust, gas, smoke, noise, odors, or vibration; that the derrick and all machinery be enclosed and sound proofed; together with numerous other conditions pertaining to limited storage tanks and disposition of oil, gas, mud, and water.

The drilling equipment installed to satisfy these requirements consists of a 136-foot steel derrick fully enclosed by sound and fire-proof canvas covering which has been painted aluminum-gray. This covering consists of two thicknesses of canvas with an inner layer of glass wool insulation about one-half inch thick, in the manner of a quilt. The derrick enclosure has been fitted with electric motor driven blowers to provide ventilation and to eliminate any possible explosion hazard that would arise if or when gas is encountered. The drilling machinery is standard heavy power equipment driven by electric motors instead of the usual internal combustion engines. The two mud pumps, also driven by electric motors, and the mud handling equipment, are housed alongside the derrick in a corrugated iron building. A six-foot chain link fence surrounds the drilling installations. These changes were made at very great expense to insure the quietest possible operations and the greatest safety.

Not only was an extraordinary amount of planning required to fit all the necessary machinery, racks, etc., on the small location but also to make it as sightly as possible. The Brooklyn Avenue frontage has been landscaped. This landscaping will be extended completely around the drilling site in the event a discovery is made. The photographs

*(Continued on Page 20)*



**Grounds landscaped—derrick enclosed for sound and completely covered by fireproof canvas.**

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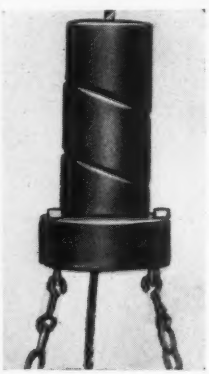
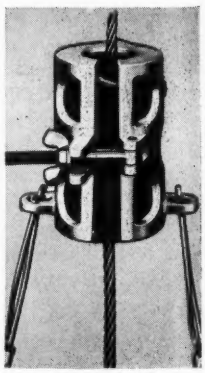


**Features:** For service on drilling and production rigs. Self adjusting to all size Wire Lines. Large area of rubber contact. Spirally molded for added tension in wiping line contour. Foolproof—no adjustment. Easy to apply, just wind on Wire Line. Kicks off when bailer hitch or rope socket hits it. Wipes line clean of heavy or light oil, heavy mud or water. Packed in compact carton, code name: STIPPLE.

**Features:** Neat, easy opening, hinged steel housing. Easily replaceable one piece spiral wiping element. Quick operating safety releases are attached to hold down chain. Automatically disengages when bailer or rope socket hits it. Large area of rubber contact. Adjustable cage to make up on rubber, and prolong Stripper life. One size for all wire lines. Complete with hold down chain and automatic safety releases. Packed in compact carton, code name: STOAT.



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# Fat-Oil De-ethanization

By A. M. Whistler,
C. F. Braun & Co.

October Meeting

In an Absorption plant, fat-oil leaves the bottom of the absorber with considerable amounts of Methane and Ethane. The absorption of these two gases is not from choice. Far better, could they be excluded in the absorption process. They are not wanted as products. And worst of all, they give us trouble, further on in separating out the desirable fractions.

Several methods have been used to rid the fat-oil of all, or even a part, of these two constituents. The commonest method is so-called flashing into a drum at lower pressure. This is really a one-step fractionation. It is very useful. But it has the disadvantage of every single-step fractionation. This disadvantage is, poor separation.

About fifteen years ago, so-called Fractionating-Absorbers were tried. Two or three trays were added below the gas inlet of the absorber. A small steam coil was inserted into the fat-oil at the bottom. No real gain resulted. Reboiling was too small for any substantial removal of Methane and Ethane.

Several years ago, propylene became quite valuable in certain petroleum-chemical plants. One of the large oil companies built an absorption plant for high recovery of propylene. They built a fat-oil fractionator for removal of all the Methane. About half the Ethane was removed also, without undue loss of propylene. All this was based on very careful paper work before construction.

During the preliminary process work on a plant built about a year ago, the question was voiced, Can the Ethane also be substantially removed from fat-oil without too much loss of Propane? The answer required a lot of tiresome paper work. But the paper work showed the idea to be practical.

Guarantees quoted were as follows. Propane retention 70 to 80 percent of that absorbed in the main absorber. Propane purity 90 to 95 mol percent. Offhand, there seems no point in quoting a range. The lower figures of 70 percent retention and 90 percent purity are all that had to be met. But the higher figures were useful. They indicated what the plant would probably do.

Figure 1 is a simple picture of the flow. The main absorber operates like all absorbers. In it, over 95 percent of the total butanes are absorbed, and over 60 percent of the propane. The fat-oil then goes to the middle of the Deethanizer. Think of the Fat-oil Deethanizer as a fractionator. It has reflux. And it has reboil. The unusual feature is that the reflux is lean-oil,—not condensed overhead.

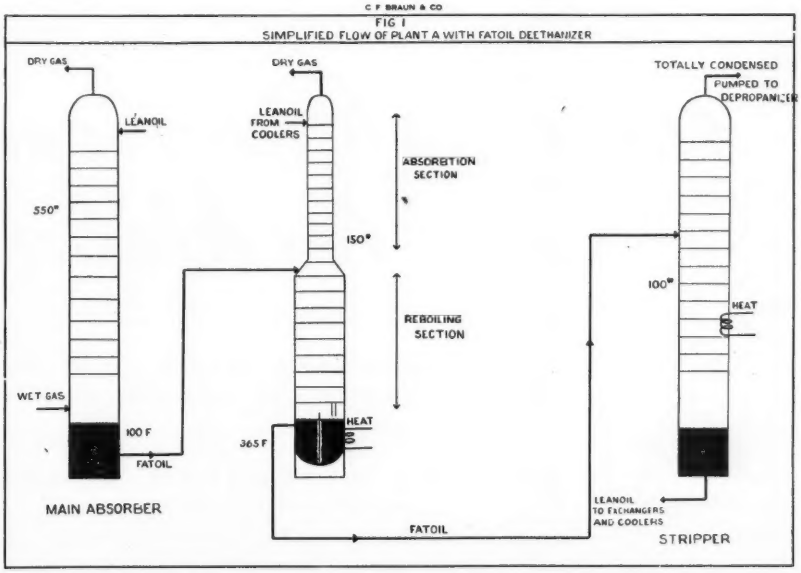
Figure 2 shows the reboiler hookup. The liquid section in the bottom is divided into two compartments. Fat-oil drops from the bottom tray into the left hand side. It is then pumped through exchangers and into the right hand side.

An important feature is the difference in temperature between the two compartments,—the first section is some 200F as against 365F in the final section. These temperatures allow the use of counter current heat-exchange with the hot lean-oil. The only direct heat used for reboiling the Deethanizer is a small amount for hour to hour control of the final temperature.

Now for actual results. Figure 3 gives averages of temperatures, pressures, and flows for one acceptance-test. Table I details the plane balance for the same test. Gas streams entering and leaving the plant are given at the top of Table I. From these, balances on Methane and Ethane can be made, since none of these two go on with the liquid products. Accuracy of this balance is shown under Material Balance.

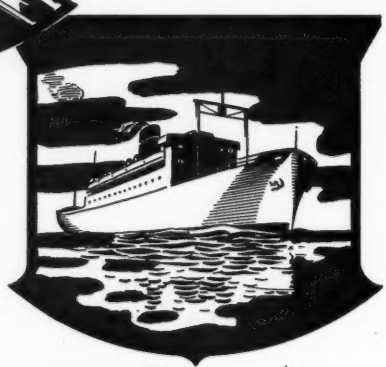
Butanes and Pentanes are balanced in two ways, under Recoveries. One way is by comparing gas-in and gas-out. The other is by comparing Product in tanks with Gas-in. The two methods check fairly well. Unfortunately, the liquid meter on Propane failed. The volume could not be measured. Depropanizer overhead is obtained by subtracting bottoms and dry gases from wet gas. This is for C3 plus only.

C F BRAUN & CO
FIG 1
SIMPLIFIED FLOW OF PLANT A WITH FATOIL DEETHANIZER



on land...

in the air...



at sea...

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Initial operating conditions were set to closely follow those computed. It was almost three weeks later that the first test-results were obtained. The results were a little surprising. Especially in the Propane purity of some 99.5 percent.

A second test practically duplicated the first except that Ethane in the Propane was practically nil. Also Propane production was some 1000 gal/day greater. The third test was a quickie. Ethane in Propane increased to a little over 1 liquid vol. percent while recovery of propane went up to 78 percent of that absorbed. Later tests, we understand, gave about the same results. There was at that time, no point in trying for increased propane of lower purity. First, the propane tanks were not ready. And second, time was not available for experimentation.

One natural question is, What are the limits of the Fat-oil Deethanizer? This is too big an order to cover all possible conditions. But we can give some ideas as to limits. The important point to keep in mind is the final bottom temperature. This is determined by two conditions. (1) Pressure. (2) Amounts of propane and butanes in the bottoms.

Thus, lean gases are not so good for fat-oil deethanizing. The wet gas given in Table I is not far from the limit. Pressure depends finally upon propanes and butanes, once the temperature is set. For conditions of Figure 3 and Table I, 150 psig in the Deethanizer is not far from the limit. To sum up, the natural field of the Fat-oil Deethanizer is for gases that are at least as rich as, or richer than, the wet gas of Table I.

Another point is heat recovery. This depends chiefly upon the bottom tray temperature. In our test conditions this is about 200F, we

**Table 1**

**VAPOR STREAMS**

| | WET GAS TO PLANT | | | | DRY GAS FROM ABSORBER | | | | Percent Recovery in Main Absorber | DRY GAS FROM DEETHANIZER | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mol.% | Gal./ Mscf. | Mscf./ 24 Hr. | Gal./ 24 Hr. | Mol.% | Gal./ Mscf. | Mscf./ 24 Hr. | Gal./ 24 Hr. | | Mol.% | Gal./ Mscf. | Mscf./ 24 Hr. | Gal./ 24 Hr. |
| CO2 | 0.60 | ..... | 119 | ..... | 0.60 | ..... | 100 | ..... | .... | 1.00 | ..... | 13 | ..... |
| H2O | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | 0.42 | ..... | 6 | ..... |
| N1 | 82.81 | ..... | 16,376 | ..... | 89.17 | ..... | 14,800 | ..... | .... | 56.60 | ..... | 759 | ..... |
| O2 | 8.92 | ..... | 1,766 | ..... | 7.89 | ..... | 1,311 | ..... | .... | 30.05 | ..... | 403 | ..... |
| C3 | 4.92 | 1.350 | 974 | 26,680 | 2.26 | 0.620 | 375 | 10,300 | 61.5 | 11.51 | 3.159 | 154 | 4,230 |
| IC4 | 0.68 | 0.222 | 135 | 4,395 | 0.03 | 0.010 | 5 | 166 | 96.1 | 0.30 | 0.100 | 4 | 134 |
| NC4 | 1.20 | 0.378 | 248 | 7,480 | 0.03 | 0.010 | 5 | 166 | 97.8 | 0.10 | 0.032 | 1 | 43 |
| IC5 | 0.26 | 0.095 | 51 | 1,880 | 0.02 | 0.009 | 4 | 149 | | 0.02 | 0.010 | ..... | 13 |
| NC5 | 0.20 | 0.072 | 40 | 1,425 | ..... | ..... | ..... | ..... | 97.9 | ..... | ..... | ..... | ..... |
| C6+ | 0.41 | 0.189 | 81 | 3,740 | ..... | ..... | ..... | ..... | | ..... | ..... | ..... | ..... |
| | 100.00 | 2.306 | 19,790 | 45,600 | 100.00 | 0.649 | 16,600 | 10,781 | | 100.00 | 3.301 | 1,340 | 4,420 |

**LIQUID STREAMS**

| | DEPROPANIZER OVERHEAD | | | DEPROPANIZER BOTTOMS | | |
|---|---|---|---|---|---|---|
| | Mol.% | Liq.% | Gal./ 24 Hr. | Mol.% | Liq.% | Gal./ 24 Hr. |
| C1 | Trace | Trace | ..... | ..... | ..... | ..... |
| C2 | 0.30 | 0.26 | 31 | ..... | ..... | ..... |
| C3 | 99.52 | 99.52 | 11,842 | 1.9 | 1.52 | 280 |
| IC4 | 0.18 | 0.22 | 26 | 23.3 | 22.38 | 4,140 |
| NC4 | ..... | ..... | ..... | 42.2 | 38.94 | 7,200 |
| C5+ | ..... | ..... | ..... | 32.6 | 37.16 | 6,880 |
| | 100.00 | 100.00 | 11,899* | 100.0 | 100.00 | 18,500** |

*—Wet-gas less absorber dry-gas, deethanizer dry-gas, and depropanizer bottoms.
**—Based on production from 1 p.m. to 3 p.m.

**MATERIAL BALANCE**

| | TOTAL OUTLET STREAMS | | |
|---|---|---|---|
| | Mscf./ 24 Hr. | Gal./ 24 Hr. | Outlet/ Wet-Gas |
| C1 | 15,559 | ..... | 0.951 |
| C2 | 1,714 | ..... | 0.971 |
| C3 | ..... | 26,652 | 0.999 |
| IC4 | ..... | 4,466 | 1.016 |
| NC4 | ..... | 7,409 | 0.991 |
| C5+ | ..... | 7,042 | 1.000 |

**RECOVERY**

| | PROPANE | BUTANES | PENTANES PLUS |
|---|---|---|---|
| Based on Wet-Gas less Losses | Absorbed 16,380 Gal./24 Hr.<br>Losses<br>C-2 Overhead 4230<br>C-4 Bottoms 280 4,510<br>Percent Loss 27.6<br>Percent Recovery 72.4<br>Based on Propane in Fat Oil. | Wet-Gas 11,875 Gal./24 Hr<br>Losses<br>C-1 Dry-Gas 332<br>C-2 Dry-Gas 177<br>C-4 Overhead 26 535<br>Percent Loss 4.5<br>Percent Recovery 95.5(1) | Wet-Gas 7,045 Gal./24 Hr.<br>Losses<br>C-1 Overhead 149<br>C-2 Overhead 13 162<br>Percent Loss 2.3<br>Percent Recovery 97.7 |
| Based on Liquid Products | | Wet-Gas 11,875 Gal./24 Hr.<br>Production 11,340<br>Percent Recovery 95.6(2) | Wet-Gas 7,045 Gal./24 Hr.<br>Production 6,880<br>Percent Recovery 97.7 |
| Contract | Depropanizer Overhead to contain not less than 70% of the propane absorbed in the main absorber. Overhead to be not less than 90% pure propane. | Depropanizer Bottoms to contain not less than 95% of the total butanes in the wet-gas. | Not Specified |

(1)—IC4 93.2, NC4 97.2.
(2)—IC4 94.2, NC4 96.3.

# —EMSCO

Picture an Emsco GA-500 Drilling Rig on a derrick floor and you have the formula for efficient operation at lowest possible cost The Emsco GA-500 Rig shown here is a 500 horsepower unit. It incorporates air-operated friction clutches; fully enclosed, pressure oil lubricated bearings and chains; has 6 hoisting speeds, 3 rotary speeds, and 1 reverse speed to the drum shaft. Here is a smooth, easily handled drilling rig which operates efficiently and economically under all drilling conditions.

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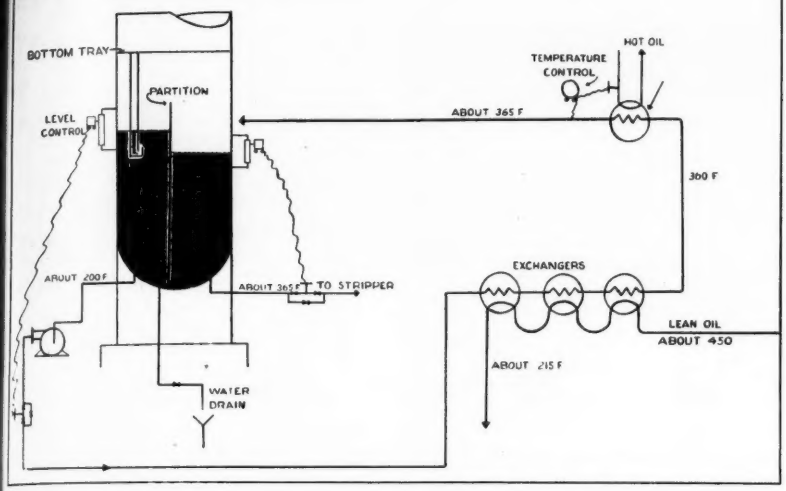
FIG 2
HOOKUP AT BOTTOM OF FATOIL DEETHANIZER




note from Figure 3. The final temperature is 365. Or a rise of 150F. As the richness of the gas changes, the big change is in the final temperature. The bottom tray does not change anywhere near as much.

Another natural question is, Can fractionation be improved? With respect to separating ethane from propane, the answer is yes, but not much. More oil could be put over the top of the Deethanizer. And the final bottom temperature would be raised. This is in effect, increasing the reflux.

To help us find the proper niche for a Fat-Oil Deethanizer, let us divide absorption plants into three main groups. First, where from 50 to 90 percent of propane, or more probably propylene, is recovered. The second, where propane can be readily marketed. But propane is still not worth expensive plants. Oil rates are set by Butane recovery. Third, where propane cannot be sold as a product.

The Fat-Oil Deethanizer does not fit the first case. Too much propane is still lost. And it does not fit the third case because of extra operating expense in fuel. It does appear to have a field in the second case, as the following analysis will show.

To make comparisons, we have chosen the unit shown in Figure 4. Call this Unit B. And the unit with the Fat-Oil Deethanizer of Figure 1, Unit A. Unit B is a very common hookup. The reabsorber, or equal, must be included for vents from both Flash Drum and Stripper Accumulator to prevent loss of Butanes. A single still is used at 150 psig. A gasoline deethanizer is included. Partly to hold propane, and partly to prevent undue Ethane contamination.

Production of Propane for the two plants is shown in Table II. Plant B has practically reached its limit in Propane recovery. More Butane and heavier is needed to hold the propane as liquid in the stripper reabsorber sends more propane to accumulator. Increased oil over the the stripper. But the additional propane simply returns as vapor to the reabsorber.

**TABLE II**

| | Unit A | Unit B |
|---|---|---|
| Gal/Day | About 12,000 | 7,100 |
| Net gain | About 5,000 | |

Plant A returns about $52,000 yearly more than Unit B. This is gross return of course. To find net return , we must find (1) first costs and operating costs. In the operating costs let us set ten cents/million BTU for fuel. And to be fair, we should deduct from the propane returns its value as gas fuel at the plant boundary.

Estimates of costs for the two units were made. Unit prices used in the estimates are those prevailing during construction of Plant A. Our estimate shows that the Plant A would cost about $40,000 less than the Plant B.

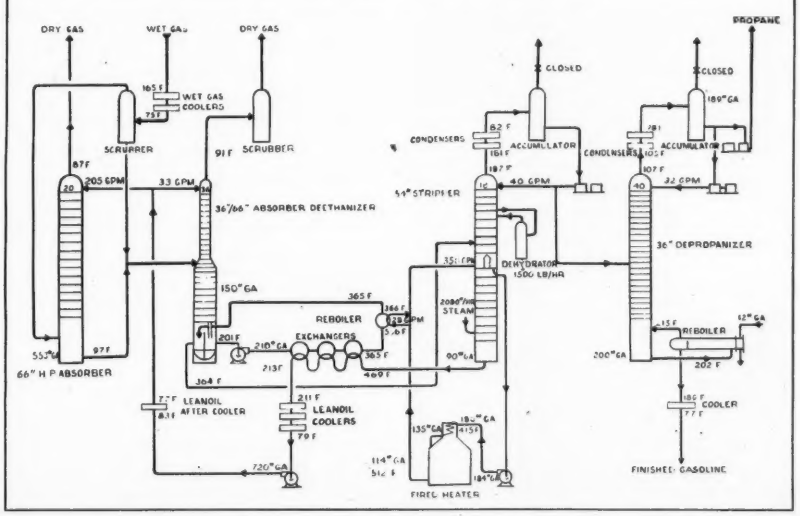
**TABLE III**

| Extra returns of Fat-Oil Deethanizer | Yearly |
|---|---|
| Propane | $52,000 |
| Less extra fuel | 5,500 |
| Less fuel value of extra propane | 15,000 |
| Other cost differences | |
| **Net gain, say** | **$31,000** |

This gain still does not allow for the extra first cost of Plant B. Here's how we might make such an allowance. Say we wish to pay off original costs in four years. The man with the Plant A would have $165,000 more in his bank account than the man with Plant B. This sum consists of $120,000 made on

C F BRAUN & CO

FIG 3
PLANT A ACCEPTANCE TEST

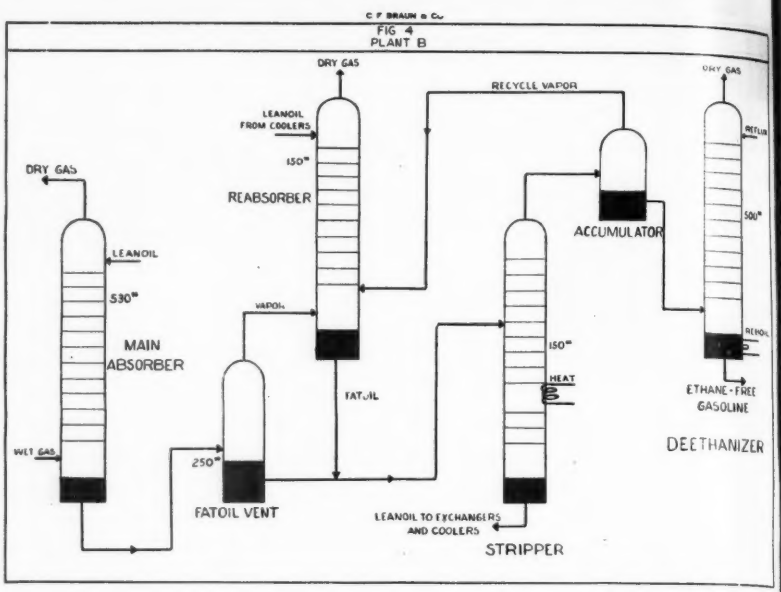


extra propane, and $40,000 that he did not spend on the original plant. The average is some $40,000 per year for the four years.

All the foregoing assumes that propane can be sold as a product. What happens if propane liquid has absolutely no sale? Plant A costs $5,500 more per year to operate than Plant B. And the cost of Plant B goes down because the Gasoline-Deethanizer comes out. But the reabsorber stays in to hold butanes. Other items remain the same. The cost reduces by about $50,000. This credit seems low. A Gasoline-Deethanizer installed by itself costs much more.

But in making our estimate, the gasoline-deethanizer was given all the breaks possible in first cost. Miscellaneous expenses were not increased. And more than full allowance was made for simultaneous construction. Only $50,000 was put in for this column, so that is all we can take out.

This "No Propane" picture makes the Fat-Oil Deethanizer uneconomical, by the $5,500 per year for extra fuel. And the plant for no-propane costs a little less.




### Summary

Operating cost of a Fat-Oil Deethanizer is higher than the usual type of plant. For practical purposes this extra cost is fuel cost.

The Fat-Oil Deethanizer does not fit certain cases. The case where the primary purpose is recovery of propane or propylene. A special plant is required. Nor does it fit the case where a sidestream of propane is sufficient in quantity and quality, to supply the market. Operating cost, and to some extent first costs, make it unattractive.

Where oil-rates are set by butane recovery, and a good market for propane exists,—the Fat-Oil Deethanizer has excellent possibilities.

## Richfield City Test

*(Continued from Page 13)*

show the equipment completely enstalled and in operation.

So far the only complaints received from the landowners have been directed against the practice of keeping the large door closed that

opens from the derrick floor out to the pipe rack. This was done to reduce the noise but the residents prefer to have it open so that they may watch the drilling operations.

## Pacific Section A.A.P.G.

Opening their Fall series of monthly meetings, the American Association of Petroleum Geologists, Pacific Section, held a luncheon meeting on September 17, at the University Club in Los Angeles.

Following the luncheon, Professor E. V. Van Amringe, Assistant Professor of Geology at Pasadena Junior College spoke to the group on "Geological Pioneers of the Southwest" in which talk he gave interesting highlights of the work of the early geologists and engineers in California and Arizona during the last century.

Drawing from his large collection of many rare volumes of old literature on the original geological and geographical studies of California and Arizona, Professor Van Amringe showed lantern slides of many of these volumes and the illustrations which they contained, thus giving the present day geologists a rare chance to see the works and pictures of the men who laid the foundation for the vast amount of geological work that has been done in the southwest United States since that time.

E. R. Atwill, President of the Pacific Section, announced at the meeting that the dates of November 7 and 8 had been decided upon for the annual Fall meeting of this section to be held at the Ambassador Hotel in Los Angeles.

## Santa Fe Springs Test Rigging Up

Standard is rigging derrick to commence drilling operations with Newson Comm. No. 1 in Sec. 36-2s-12w in the Santa Fe Springs area. Carmenita Comm. No. 1 in Sec. 4-3s-11w is fishing drill pipe, top of which is at 8920 ft. Total depth of the try is 9595 ft.

# THIS LAUGH

# OFF!!

A skinny hatchet-faced spinster attending a Hollywood garden party, gazed out upon the incredibly beautiful landscape and gushed, "Oh, I just love nature!"

Groucho Marx overheard.

"That's loyalty," he quipped, "after what nature did to her!"

---

"How's your good wife, Sultan?"

"Oh, she's all right, but the other forty-nine are more fun."

---

Cop: "What's the idea of speeding like that?"

Driver: "Well, the brakes don't work so I'm hurrying home before I have an accident."

---

Have you heard about the absent-minded professor who threw a cigarette down an open manhole, and then tried to step on it?

---

Teacher: "Johnnie, do you want to leave the room?"

Johnnie: "You don't think I'm standing here hitch-hikin', do ya?"

---

"What happened after you were thrown out by the side exit on your face?"

"I told the usher I belonged to a very prominent family."

"So what?"

"He begged my pardon, asked me in again and threw me out the front door."

---

Kitty: "I've always had a presentiment that I'd die young."

Katy: "But you didn't, darling, did you?"

---

Don: "Say Doc, I asked that nurse to put a hot-bottle on my feet and she stuck up her nose and walked out."

Doctor: "What else could you expect? That, young man, was the head nurse."

Don: "Oh, do they specialize that much? Then send me the foot nurse."

A young matron was worried about her 9-year-old son. No matter how much she scolded, he kept running about witth his shirt tails flapping. On the other hand, the neighbor had four boys, and every one of them always wore his shirt neatly tucked in.

Finally our friend begged the neighbor to tell her the secret.

"Oh, it's very simple," she replied. "I just take all their shirts and sew an edging of lace around the bottoms."

---

"I broke my husband of biting his nails."

"How?"

"I hid his teeth."

---

The man who once most wisely said, "Be sure you're right, then go ahead," might well have added: "When you know you're wrong, be sure to quit."

---

"Nature seems determined to make us work."

"Yeah, the less hair we have to comb, the more face we have to wash."

---

Professor: "Mr. Davis, will you tell me why you look at your watch so often?"

Frosh: "Of course, sir! I was afraid, sir, that you wouldn't have time to finish your interesting lecture."

---

A Russian psychologist says that any girl can marry any man she wants, if she repeats often enough to him these magic words: "You are so wonderful!"

---

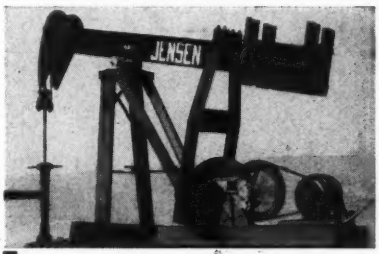
There is a tribe in Africa which limits orators to just what time they can stand on one foot. And they call Africa the "Dark Continent!"

A young woman entered a store and asked for a pound can of floor wax.

"I'm sorry," said the clerk, "all we have is sealing wax."

"Don't get funny," she snapped, "who'd want to wax the ceiling?"

---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***. . . but it's hard at work already!***

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*"Just where is that pipe stuck*

SO NEW that it hasn't been christened, McCullough's brand-new "baby" is already a veteran of dozens of jobs. An electrical device run into the well on a conductor cable, it locates the *exact* spot at which drill-pipe, casing or tubing is stuck... the highest point at which the pipe is stuck, or the lowest point at which the pipe is free, however you regard it.

Used prior to a cutting job, it serves you and saves you in *four* ways:

SAVES RIG TIME, because it comes up with the one right answer in fairly quick time.

SAVES CUTTING, because one cut is usually all that's needed... the device locates, *accurately*, the lowest point at which pipe can be pulled from the well.

SAVES PIPE, because you get all the pipe at one cut, rather than in small, unusable pieces—an important consideration these days.

SAVES FOOTAGE, because you make the cut at the lowest possible point, thus saving on the re-drill.

The device has also been used to find out whether or not a packer or tubing hanger is stuck (yes, the tool will even run inside 2" tubing!), to locate the top of cement around casing, and to make sure that the casing string is actually in tension when landing casing. So, even if we haven't named it, we've been keeping it busy. Want further information? Glad to give it to you... give us a call.

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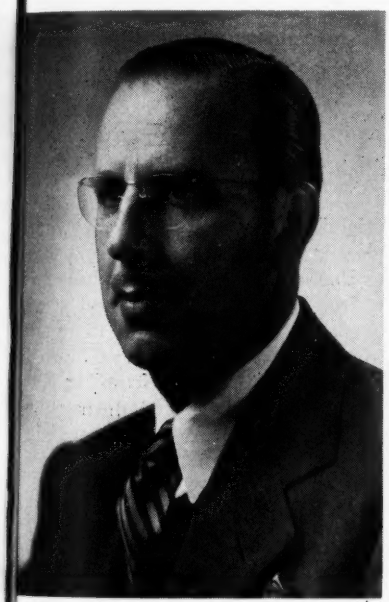
# Personalities IN THE NEWS

## Puls and Sands Advanced By Texaco

J. H. Puls has been appointed Assistant Manager of the Producing Department, Pacific Coast Division of The Texas Company, and A. W. Sands replaces Puls as Superintendent of Drilling and Production Operations, it was announced recently by Torrey H. Webb, Vice President.



J. H. Puls

sion Superintendent of Drilling and Production in December 1944.

Puls is a graduate of the California Institute of Technology in Mechanical Engineering and was first employed by the company in 1925 in refinery and pipe line engineering. In 1937 he was placed in charge of mechanical and production engineering at Long Beach and transferred to Los Angeles in 1940 when he became Division Engineer in charge of the civil, production and development engineering staff for the Pacific Coast area. He succeeded W. H. Farrand as Divi-

Sands, a graduate of Stanford University with a degree in geology, ber of a drilling crew in August started with the company as mem- 1926 and became Resident Geologist in the Ventura District in November 1926; later serving in other capacities as Assistant to Division Superintendent in the Los Angeles Basin area, Superintendent of Production operations in Ventura District, and as Assistant Superintendent Drilling and Production Operations for the Pacific Coast Division, his former position.

## Cook and Poole of Security On Sales Trip

R. M. "Bob" Cook, General Sales Manager, and E. R. "Ray" Poole, Manager of Foreign Service Department, for the Security Engineering

Bob Cook

Ray Poole

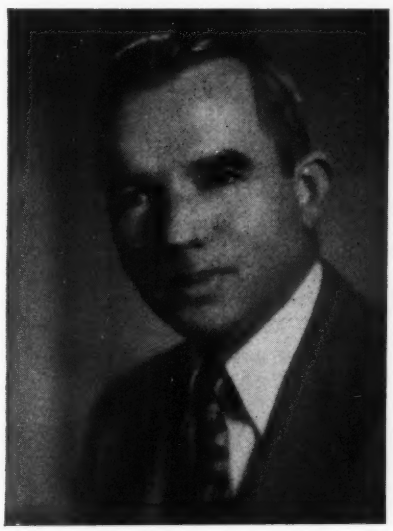
Co., Inc., are on an extended business trip to New York, New Orleans and Houston. After a short stay in Houston, Bob Cook will go on to Fort Worth and Midland before returning to the home office in Whittier, while Ray Poole will go down to Mexico City and then return to Whittier prior to his leaving for Barranquilla, Columbia where he will make his residence as representative of the Security Engineering Co., Inc.

## Broomfield Opens Consulting Office

An announcement has just been received from R. A. (Bud) Broomfield, Jr., well known to California oil men through his association with the Barnsdall Oil Company, of the opening of offices as a consulting petroleum geologist and engineer in the Booker Building, Artesia, New Mexico.

## Sievers Announces New Chemical Division

J. Paul Sievers, President of Atlas Production Inc., announces the establishment of a new chemical division for the marketing of HI-PERM, an outstanding oil well cleaning chemical.



Norman C. Wells

All field service engineering will be under the supervision of Norman C. Wells, who has had experience in the various phases of the oil industry for the past 21 years. Mr. Wells is a graduate of the University of California at Berkeley of the class of 1925, and a member of Tau Beta Pi, honorary engineering society. He is an active member of the A.P.I. and A.I.M.E. and a charter member of C.N.G.A.

HI-PERM will be the principal line handled by the Chemical Division. Complete well servicing will be handled out of the Santa Fe Springs Office. Certain other commercial chemicals will comprise the materials handled by this new division.

---

Oil is being sought in Ethiopia by an American company.

Balboa Beach and Las Vegas were among side trips enjoyed by Bob Roberts, public relations expert for Standard of California, on his recent vacation. Bob never looked better or wore a deeper coat of tan in his life.

---

Reese H. Taylor, president of Union Oil, and R. G. Follis, president California Standard, are among industry leaders named to the American Petroleum Institute standing committee of nine, which each year will select a man or woman in the oil industry for the institute's annual award for distinguished achievement.

---

Frances Green, the first woman in General Petroleum marketing department to round out 30 years service, was the honored guest at a surprise testimonial luncheon at the Town House in Los Angeles. Vice president Clarence Beesemyer, in charge of marketing, made the arrangements. Ladies in attendance were friends and associates. They presented Miss Green with two silver bracelets and a set of matching silver earrings.

---

Highlighting the recent meeting of the Petroleum Accountants Society at the Los Angeles Athletic Club was the address on refinery accounting by Harold W. Collin of Standard. Well-versed in the subject, Collin explained in detail accounting for this branch of the industry.

---

James C. Bransford ,engineer and geologist, has changed his office address from the Los Angeles Subway Terminal Building to 433 South Spring St., Los Angeles. Bransford and the late Charles Stebbins shared a suite of offices in the Subway Terminal Building, until Stebbins' death some months ago.

---

Mary Desmond with the soft Southern accent, who came from "Nuh Awleans" to Los Angeles some years ago and joined the Oil Producers Agency, has departed on a vacation in the hometown along the banks of the Mississippi.

## Tubbs Honored by Brand Names Foundation

Tubbs Cordage Company of San Francisco was honored recently when Mr. Irwin M. Lord, Production Manager, received the Brand Names Foundation "Certificate of Public Service" at a banquet at the Palace Hotel in that city.

**Irwin M. Lord, Production Manager, of the Tubbs Cordage Company, is shown receiving the Brand Names Foundation's "Certificate of Public Service".**

The award, given in recognition of 55 years of use of Tubbs Cordage Company's "Cloverleaf" brand, was witnessed by business and industrial leaders, and newspaper, magazine, radio and advertising executives. The Foundation's coveted certificate is awarded only to companies whose brand names have been in continuous use for 50 years or more, and was created to emphasize the proved value of brand names to both supplier and consumer.

According to Mr. W. I. Atherton, sales manager, Tubbs Cordage Company's original rope mill was established on San Francisco Bay in 1856—over 90 years ago. The well known "Cloverleaf" brand has been utilized on both rope and twine to denote the highest quality product of the Tubbs mills.

Herman D. Nichols, vice-president of Tubbs Cordage Company, returned recently from Manila, P. I., where for the past several months he has ben active in the work of rehabilitation of the cordage industry.

---

Robert S. Lytle and the Los Nietos Co. have named Lewis N. White as manager of their Texas operations.

The accidental death of Homer E. Havenstrite at only 44 marked the passing of one of the petroleum industry's most popular members. He was killed when his automobile crashed head-on into another car in Cajon Pass. His wife, Mildred, was critically injured. They were en route to Wyoming to visit relatives. Associated with his brother, Russell E. Havenstrite, he held wide repute as an expert in oil production practices. Besides his widow, he leaves two children, Carol Lee, 17, and Stewart, 14, who did not accompany their parents on the trip.

---

D. B. Keele, service representative at Shell Oil's Los Angeles depot, is president of the newly organized Shell Toastmasters Club. Ben A. Snaer is vice president, David H. Edmondson, secretary-treasurer; Joseph P. Ensch, seargent-at-arms; and Conley LaForce, deputy governor. The club is a reorganization of the Shell Fellowship Club which prospered before the war.

---

Cecille Johnson, secretary for Oceanic Oil Co. happily reports that her husband, Waldron, has fully recovered from injuries suffered when struck by an auto more than six months ago. Waldron was injured shortly after discharge from the Navy, in which he served during the war years. The Johnsons recently purchased a delightful orange grove at Riverside.

---

Glenn Dial, joint sponsor with Gene Reid of a wildcat test in the Pyramid Hills area, is a newcomer to California. His operations in the past have been largely in Illinois. He makes his California residence in Hollywood.

---

E. C. Brown, president of Brown Drilling Co., of Long Beach, was elected vice president of the American Association of Oilwell Drilling Contractors at the sixth annual convention in San Antonio, Tex.

---

Douglas N. Harris, Charles R. Campbell and Alex B. Chapman, Jr., members of the Shell staff at the company's Wilmington refinery, are back on the job, after serving in various branches of the armed services.

# Field Development

PREPARED FROM CALIFORNIA OIL WORLD NEWS SERVICE

## Los Angeles Basin

### Amerada Spuds Beach Wildcat

Amerada Petroleum's first essay in the Los Angeles Basin, Anaheim Sugar No. 64-7 in Sec. 7-6s-10w in the Huntington Beach area, has been spudded and is standing with surface pipe set at 766 ft.

Heretofore, Amerada has confined its California activities to San Joaquin Valley areas and gas country in the northern part of the state, where company operations have met with outstanding success.

The well is easterly offset to A. W. Lyddon's Anaheim Sugar No. 7-1, which discovered new oil some months ago in territory east of the Huntington Beach field and two miles south of the town of Talbert.

### Antelope Valley Wildcat Drilling

In Antelope Valley, Amapola Oil Corp. is drilling Amapola No. 1 in Sec. 6-6n-12w below 1900 ft., after running electric log. The try is not a great distance from Lancaster.

### Alondro Park Try Rigging

Approximately 650 ft. south of its Bodger No. 1 discovery well, British-American Oil Producing is rigging up Alondro Park No. 1 in Sec. 22-3s-14w in the Gardena area, Los Angeles County. Severns Drilling Co., contractor driller of the discovery, has the contract for the present job.

### Del Valle Field Project Drilling

Southern Calif. Pet. Corp., Ltd., is drilling Adams-Aguirre No. 101 in the Del Valle field at 688 ft. Located in the east quarter corner of Sec. 13-4n-18w, the Aguirre 160-acre lease already contains two producing wells. They were drilled and completed by Southern Calif. Pet. and Universal Consolidated under a joint operating agreement.

These two principals recently divided the property in equal portions and are developing each 80-acre tract independently. Interest still is combined in the two producers.

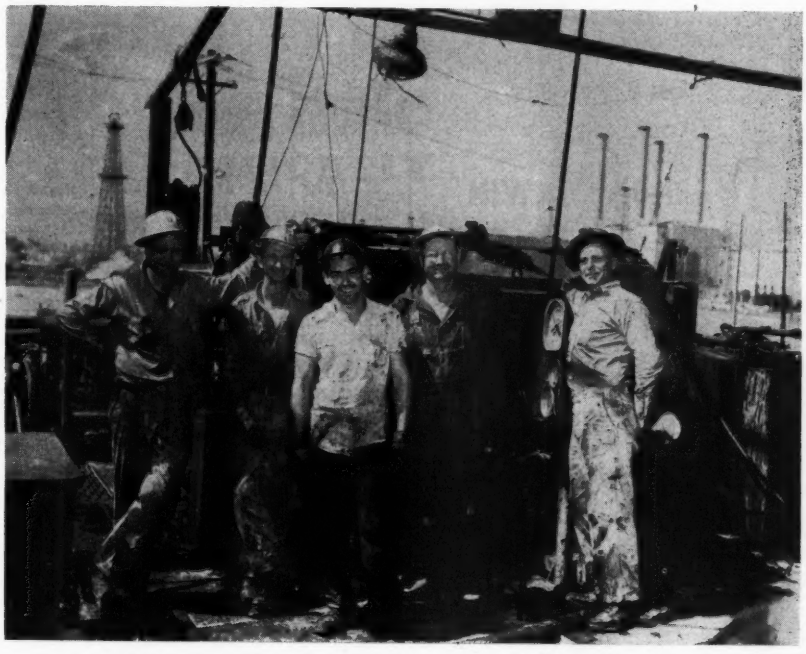
Bankline Oil's Black No. 103 test in Sec. 13 is reaming to set casing. Bottom is 4450 feet, with oil sand top at 3090 ft. Superior Oil and British-American Oil Producing is rigging up Black No. 14 in the section.

### El Segundo Try Drills

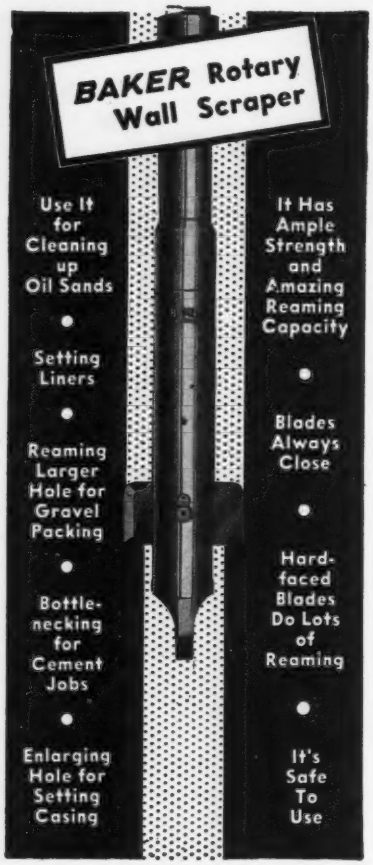
Northwest of El Segundo, Standard Oil Co., Operator, is drilling ahead below 1100 ft. with Six Companies Fee No. 2 in Sec. 2-3s-15w. The 11¾-in. casing was cemented at 1095 ft.

### Yorba Linda Test Coring

General Exploration Co. is still coring at a depth of 4300 feet with Marshburn No. 1, a wildcat test in Sec. 23-3s-9w in the Yorba Linda area of Orange County. Ralph M. Parsons Co. is in charge of drilling.



**Long Beach Oil Development Co's well No. 134-W being drilled by Fowler Drilling Co. on reclaimed land near the pontoon bridge on Terminal Island. Completion is anticipated at 6060 ft. after a total of about 45 days drilling. Part of the crew is shown above: (left to right) E. H. Harris, pipe racker; R. S. Fulbright, derrickman; G. R. Fulbright, helper; Bill Fulbright, driller; A. L. "Worm" Smith, cathead. Photo by Stiefler.**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## Beach Area Adds Interest

The West Newport-Huntington Beach area is the current Los Angeles Basin interest center.

Signal Pet. Co. of Calif., Ltd., has completed its Callens No. 2 in Sec. 18-6s-10w for an initial yield of 750 barrels of oil through an 18/64-in. bean. At last reports, output was 500 barrels a day of 22.6 gravity oil through a 22/64-in. orifice and cutting very slightly. Total depth is 3730 ft.

Signal Pet.'s Deeble No. 1, an offset to the new well, is rigging up in Sec. 13-6s-11w. The geology was worked out for the company by James C. Bransford.

Standard has location staked for its Deeble-Smith No. 1 in Sec. 13, and has placed its McLeod No. 1 in Sec. 18 on the pump for an initial production of all water. The latter went to a total depth of 3845 ft.

Having recovered the 5½-in. liner and plugged hole at 2445 ft. Barnhart-Morrow Cons. is milling window at 2365 ft. in Alford No. 1 in Sec. 18. Total depth of the try is 3887 ft. In Sec. 13, Tide Water Associated is coring shale at 3750 ft. with Aldrich Fee No. 1.

Warren L. Meeker & Russell D. Garner, have added Deeble No. 1 in Sec. 13 as a substantial producer. The well started flowing through casing at the rate of 950 barrels gross through a 20/64-in. choke. Current yield is 600 barrels of 23.4 gravity oil daily. Total depth is 3830 ft. The operators have scheduled four new wells in the area. They will be Pongratz No. 1 to 4, inclusive located near the intersection of 18th and Whittier Sts. in Sec. 20-6s-10w.

## Inglewood Test Promises New Oil

All signs to date in Basin Oil Co's Standard Brick No. 1 at Inglewood are promising. At present the company is changing from gas to oil fuel for boilers, due to cooler weather, which interfered with normal gas supply. Gas for industrial operations of this type take the lowest cost rate and suppliers hold the right to curtail in this direction when householders' consumptive demand increases in an appreciable degree.

The well is bottomed at 10,082 ft., with casing set at 9935 ft., protecting several hundred feet of oil sand in the Miocene formation. A two-foot zone below the shoe tested favorably.

## Costa Mesa Job Inactive

O. F. Darling's Sierra No. 2 in Sec. 23-6s-10w in the Costa Mesa wildcat district is idle at a depth of 4506 feet.

## Wildcat Drills At La Mirada

General Petroleum is making steady progress with the drill near 10,500 ft. in sand and shale with La Mirada Comm. No. 46-1 in Sec. 16-3s-11w. Location is not far from the La Mirada station of the Santa Fe Railway.

## Coyote Outpost Location Staked

Severns Drilling Co., which has been eminently successful both as a contract driller and developing production in its own right, has location staked for McNally No. 6, a westerly outpost test of the West Coyote area in Sec. 24-3s-11w.

## East Los Angeles Wells Progressing

Richfield Oil is reaming to test U. P. Unit No. 2 in Sec. 8-2s-12w in the East Los Angeles area, with hole bottomed at a depth of 8861 ft. Flood Control No. 1 in Sec. 14 is drilling below 8700 ft. Boyle Comm. No. 33-1 in Sec. 31-1s112w is making hole at 3750 ft.

## Union Drills Dominguez Job

Union Oil last was reported drilling at 9850 ft. with Hellman No. 58 in Sec. 27-3s-13w in the Dominguez area. In the Simi area, Simi No. 7 in Sec. 22-3n-17w has been completed at 970 ft. for a yield so far of mostly water.

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## EFFICIENTLY and ECONOMICALLY

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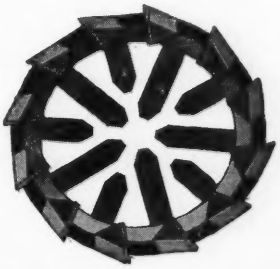
Above: Cut-away view of the Globe Junk Catcher showing large capacity in the barrel and arrangement of catchers in the bit head. Below: End view of bit head and catchers.



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# Coastal and Northern District

## Santa Maria Adds Producer

Sunray Oil Corp. has completed Donovan No. 3 in Sec. 13-10n-35w in the Santa Maria Valley field. The new well, located on acreage acquired by Sunray early in the year from Bel-Air Oil has been put on the pump for a yield of 68 barrels of 17.4 gravity oil a day from 4766 ft.

Exeter Oil Co., Ltd., also has finished a well in the field. It is Kern No. 1 in Sec. 28-10n-34w, which was drilled to 5712 ft. for an initial yield of 75 barrels a day gross, cutting 75 per cent. The company's Gilliland No. 1 in Sec. 29 is rigging up.

Union Oil's recent completion, Fleisher No. 1, is currently making 83 barrels of 13.9 gravity oil a day, cutting 10 per cent. Total depth is 5075 ft. and location of the well in Sec. 31-10n-33w.

## San Ardo Wildcat Has Sand Troubles

Texas Co.'s Aurignac No. 1 in Sec. 4-23s-10e in the San Ardo area of Monterey County is still bailing sand, after 22 runs with sand pump failed to lower sand level. Drilled to a bottom of 4201 ft., hole is plugged back to 3109 ft.

Approximately 17 miles northwesterly, the company's Currell No. 1 wildcat in Sec. 4-21s-8e in the Oasis area is drilling slightly below 2500 ft.

Near Camarillo, Broome No. 1 in Sec. 29-1n-20w is drilling at 1150 ft.

## Eureka Wildcat Continues Tests

Texas Co. is continuing to test uphole by stages with Holmes-Eureka No. 3 in Sec. 22-3n-1w in the Eureka area of Humboldt County. Intervals at 5660-5710 and 4600-4655 ft. tested wet. Total depth is 7850 ft. Location has been made for Anderson No. 1 in Sec. 8-2n-1e.

## Red Bluff Try Drills

Tehama Exploration Co., a North Sacramento organization, is drilling in shale around 2200 feet with Teco No. 1 in Sec. 30-27n-5w in the Red Bluff area, Tehama County. The try was originally started by North Counties Development Co.

## Ripon Wildcat Makes Headway

Near Ripon in Stanislaus County, Tide Water Associated is drilling Overton No. 34-16 wildcat test in Sec.16-3-7e at 3223 ft. Surface pipe is set at 430 ft.

## Yolo County Adds Gas Well

Shell Oil Co., effort to develop new gas in the Winters area of Yolo County have been crowned with success. The new producer, known as Winters Unit No. 1 in Sec. 19-8n-1e, was completed at 5238 ft. for 3,060,000 cubic feet of gas.

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## San Mateo Try Listed

In the San Gregonio area, San Mateo County, Progressive Solvents Corp. has location staked for a wildcat test in Sec. 24-7s-6w on the Walter Moynier property.

---

## Simi Well Drills On

Richfield Oil is drilling at 992 ft. with Tapo Fee No. B-1 in Sec. 29-3n-18w in the Simi area of Ventura County. Ralph M. Parsons Co. is in charge of operations.

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## Paso Robles Try Active

Drilling continues at a depth of 4820 ft. in hard shale in Paso Robles Mutual Oil Dev. Assn., No. 1 exploratory venture in Sec. 3-26s-12e in the Paso Robles district, San Luis Obispo County. The try is sponsored by a group of Paso Robles businessmen.

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## San Ardo Test Continues Down

C. C. M. O. Co. continues todrill steadily on down at 6745 ft. in San Ardo No. 6-G1 in Sec. 6-23s-10e in the San Ardo area, Monterey County.

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## West Mountain Well Grades Site

F. E. Fairfield, prominent operator and supply man, is grading ground for Richardson No. 1 in Sec. 23-3n-21w in the West Mountain area, Ventura County. His Lemon Co. No. 1 in the section is standing with casing cemented at 2700 ft. following electric log run. Total depth is 2796 ft.

In the South Mountain area, D. D. Feldman is building storage tanks for Richardson Estate No. 1 in Sec. 23-3n-21w.

---

## Chico Test Hits Basalt

Standard Oil's Odell No. 1 wildcat test in Sec. 9-20n-1e in the Chico area, Butte County, is drilling in basalt at 1550 ft. Casing is set at 1477 ft.


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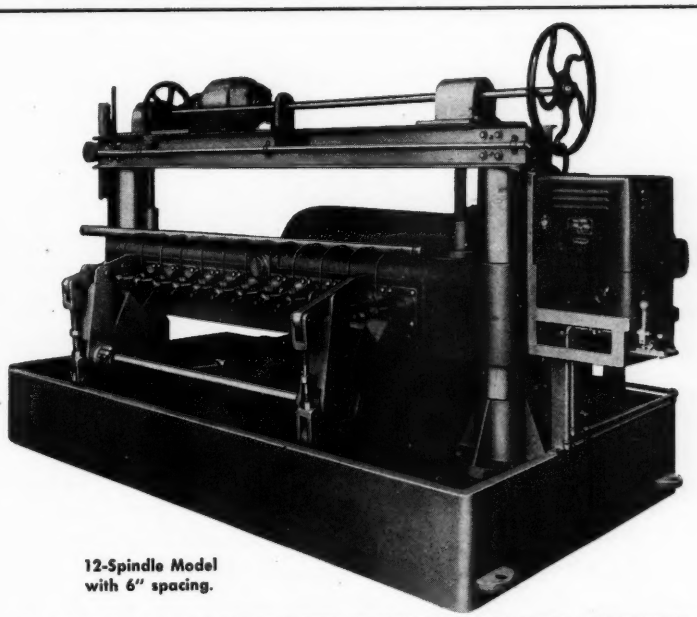

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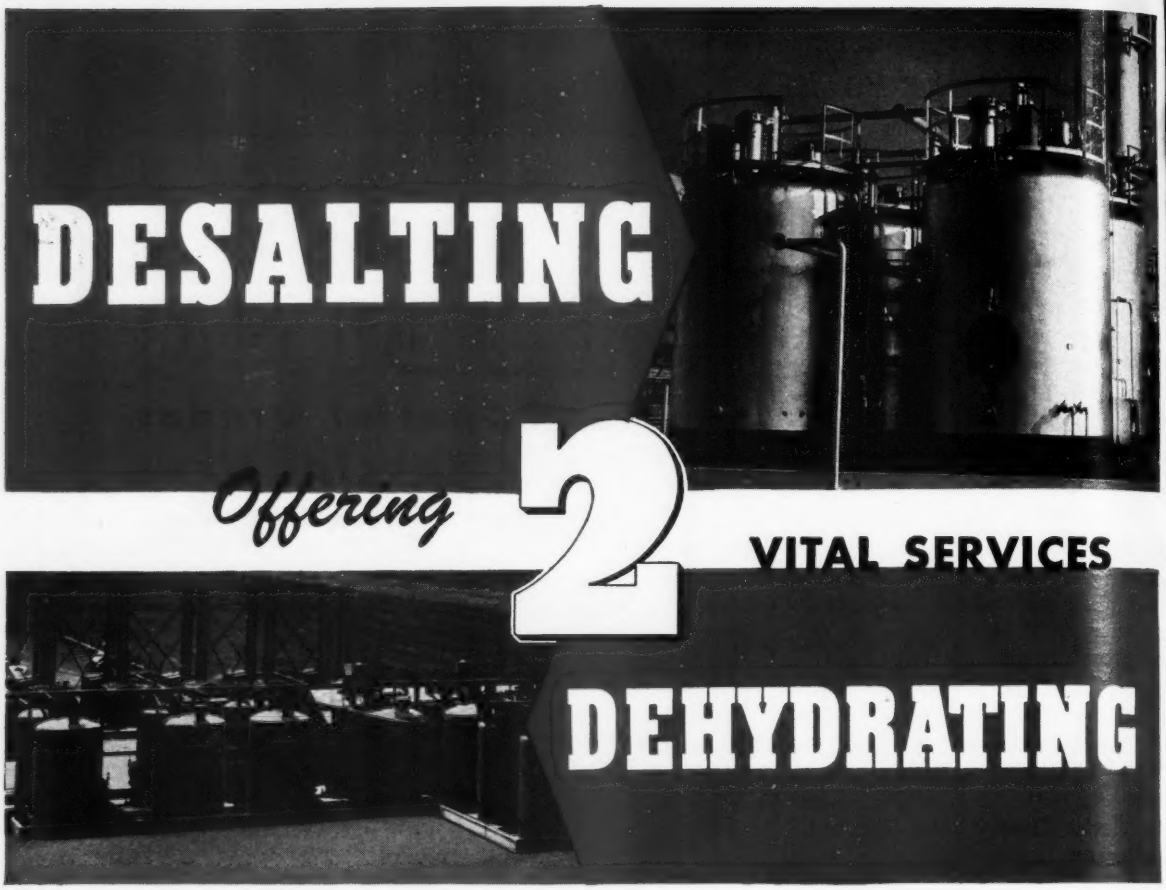


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# San Joaquin Valley

### Paloma Well Grading Site

Western Gulf is grading location or its L.A.A.C. No. 16-6 in Sec. 32s-27e in the giant Palma field of Kern County. The ground is owned by the Los Angeles Athletic Club and if the present drilling job is successful additional acreage will become under the Paloma unit plan of operation, with the club's royalties naturally increasing.

C.C.M.O. Co., No. 14-35 in Sec. 35-31s-26e last was reported coring oil sand at a depth of 11,603 ft.

### Lanare Test Gets Ready

Pacific Western is preparing to start work on Brix-Francis Comm. No. 1 in Sec. 16-17s-18e in the Lanare area, Fresno County. Located northwest of established production, San Joaquin Drilling Co. has been awarded drilling contracts.

In the Miramonte area of Kern County, Pacific Western's National Royalties No. 1 in Sec. 5-26s-22e continues to drill ahead at 15,141 ft. This is a scheduled Vedder test.

### Jacalitos Job Bereft of Oil

Exploratory operations of Shell Oil to develop new oil in the Kreyenhagen Hill southeast of the Jacalitos field, failed of their objective and the test has been given up at a total depth of 7051 ft. The Temblor was topped at 6020 and the top of the Kreyenhagen at 6980 ft.

### San Emigdio Try Finds Little Oil

Having found but little oil in going to a bottom of 4019 ft., Western Gulf has abandoned its San Emigdio No. 3 in Sec. 31-11n-22w in the San Emigdio area of Kern County. On formation test of the interval at 3264-3362 ft. recovery was 300 ft. mud and a trace of oil. After plugging at 622 ft., mud, salt water and a trace of oil was bailed.

The company's No. 4 in Sec. 19 is drilling ahead below 2150 ft. In the Arvin area, Di Giorgio No. 1 in Sec. 10-31s-29e is making hole ahead in schist at 6010 ft.

### Temblor Ranch Well Spudding

Gannon, Gannon & Aslin are about to spud No. 69-J-4 in Sec. 36-29s-20e on the Temblor Ranch in Kern County. No. 69-J-3 is testing top oil sand at 550 ft., after plugging back from 634 to 590 ft. No. 69-J-2, recently completed at 586 ft., currently yields 37 barrels of 16 gravity oil a day, cutting two per cent.

### New Try At Bacon Hills

West from the shallow production at South Belridge, Seaboard Oil and Bandini Petroleum have joined forces to drill a new wildcat in Sec. 21-28s-20e in the Bacon Hills sector

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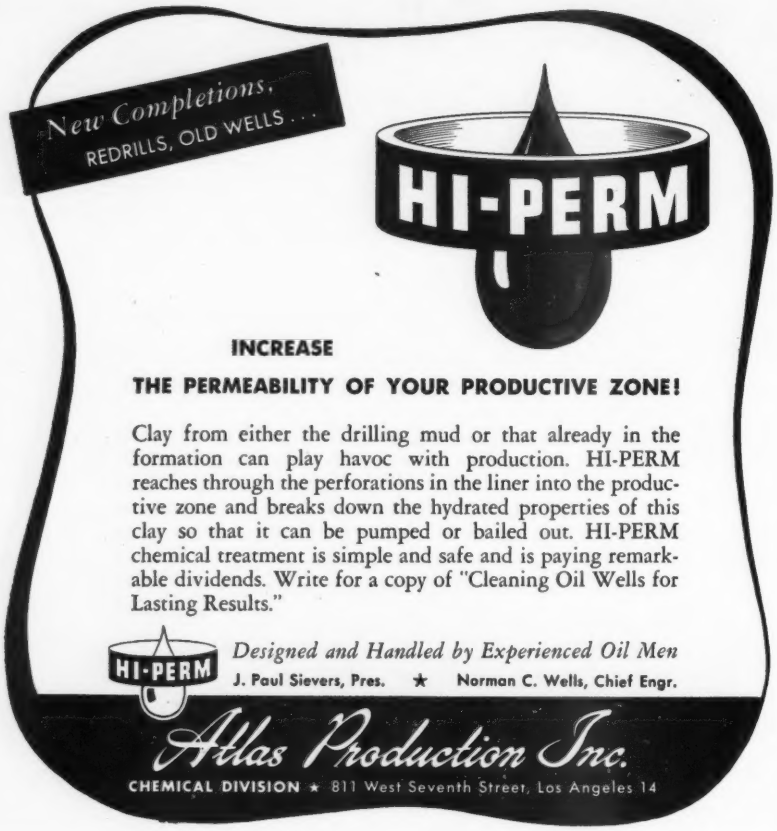
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## Social-Economic Values

*(Continued from Page 7)*

take innumerable steps toward the achievement of the more abundant life. Farmers produce more; physicians reach isolated patients quickly. It has indirectly improved rural education by making it possible for the consolidated grade school to replace the single-room, red schoolhouse. It makes minerals, forests and game accessible to millions, conserves freshness and vital values of foods, increases their variety, cheapens the movements of men and goods, opens the suburbs to better living, saves labor, enhances the values of leisure, improves sanitation and health.

These are among the matters which the experts on this panel are going to discuss in some detail. In the time available they can offer but a few illustrations of the many ways in which the petroleum industry has contributed to the growth of the economy. They take pride in their accomplishments and in those of their predecessors. I am sure that if you were to ask them, they would express no sense of having worked contrary to the interests of the people they serve. Each one of them is confident that he and his associates will be able to operate more efficiently next year than they did last year. For the most part they would say that they operated as efficiently last year as the then existing knowledge made practically possible.

## Di Giorgio Ranch Explorer Drilling

Union Oil is drilling ahead b low 1050 ft. with its No. 62-3 Sec. 3-31s-28e on the Di Giorg Ranch near Arvin, Kern Count No. 71-3 was finished at 4705 ft. an is producing 25 barrels of 26 gravi oil daily.

## Belridge Hole Drills and Cores

Belridge Oil continues to drill an spot core at 13,877 ft. with the dee test, No. 62-W-33, in Sec. 33-28 21e at South Belridge. Richfiel Oil's Berry No. 1 in Sec.30 of th township is standing idle at 4485 f The company has made location fo its third corehole, Berry No. 2 i Sec. 30.

## Dome Test Still Drills

In the Middle Dome area Kettleman Hills, Standard Oil drilling at 11,414 ft. in No. 73-30 a scheduled Eocene test in Se 30-29s-19e, Kings County. Bolsa Ch ca holds 25 per cent interest in th project.

## Edison Outpost Coring On Down

On the north flank of Ediso field, Oceanic Oil is coring ahea below 3550 ft. in Osborne No. 1 i Sec. 15-30s-29e. About six ft. of oi 3520 ft. Harry H. Magee, Operator sand was cored between 3510 and Dougherty No. 8 in Sec. 14 is a lo cation.


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